M/40051-US = EP 544,158 = DE 41 38 763 (2)

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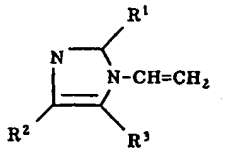
BASF AG *DE 4138763-A1
91.11.26 91DE-4138763 (93.05.27) C08L 39/04, C02F 1/56, C08F 8/44, C09K 7/00, C10G 33/04, C09K 3/16, C08F 26/06

Homo or copolymers of quat. 1-vinyl imidazole(s) useful as polyelectrolytes - prepd. by adding quaternising agent to polymer contg. 1-vinyl imidazole and copolymerisable monomer e.g. vinyl pyrrolidone, for cosmetics and oil recovery agents

C93-078827

A(4-D8, 10-E19, 12-M1) D(8-B) H(1-D6)

Homo- or copolymers derived from quat. 1-vinylimidazoles comprising 10-100 wt.% 1-vinylimidazole of formula (I) and 0-90 wt.% copolymerisable monomer (II) (wrt sum of (I) in quat. form and (II)) are prepd. by adding a quaternising agent of formula $(R^4)_nA$ (III) to the homo- or copolymer.



(I)

R^1, R^2, R^3 = H or 1-4C alkyl.

$(R^4)_nA$ (II)

R^4 = 1-20C alkyl or benzyl;
A = iodide, carbonate, sulphate or (m)ethyl sulphate; and
n = 1-2.

USE/ADVANTAGE

The use of the homo- or copolymers as polyelectrolytes in cosmetic formulations, conductivity enhancing agents, and flocculation and oil recovery agents is claimed.

The polymers are non-corrosive, have a high-charge density and are hydrolysis resistant.

PREFERRED COMPOSITION

(I) is unsubstd. 1-vinyl imidaozle, (II) is one or more of 1-vinylpyrrolidone, 2-hydroxy(m)ethacrylate, 2-hydroxypropylacrylate or 3-hydroxypropylacrylate and (III) is methyl iodide or dimethyl sulphate or diethyl sulphate.

Homo- or copolymer comprises 10-98 wt.% (I) in quat. form and 2-90 wt.% (II).

EXAMPLE

Mixture (A) comprised 280 g 3-methyl-vinylimidazolium

DE4138763-A+

methylsulphate, 15 g N-vinylpyrrolidone and 400 g H_2O with 10 wt.% NaOH at pH 7.5. Mixture (B) comprised 2.5 g 2,2'-azobis(2-methylpropionamidine)-dihydrochloride and 100 g H_2O.

100 ml (A), 12 ml (B) and 300 g H_2O were heated to 65°C, with the remaining (A) added over 5 hrs. and remaining (B) added over 7 hrs. After heating for a further 1 hr., a clear viscous polymer soln. having a K-value of 110.5 (1 wt.% aq. soln., 25°C) was obtd. (9pp2382SLDwgNo0/0).

Addnl. Data: MEYER H, SANNER A, REINHARDT R, FROSCH F, RAUBENHEIMER H J

DE4138763-A